ON EXTERNAL
PERINEAL URETHROTOMY,

OR AN

IMPROVED METHOD OF EXTERNAL DIVISION OF THE URETHRA IN PERINÆO, FOR THE RELIEF OF OBSTINATE STRICTURE.

WITH REMARKS ON THE

PREPARATORY- AND AFTER-TREATMENT.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

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ON EXTERNAL

PREINEAL URETHROTOMY.[1]

I DESIRE to call the attention of the profession to a safe and simple mode of external division of the urethra in perinæo, for the relief of obstinate stricture, and also to make some remarks on the preparatory- and after-treatment.

I have named this method External Perineal Urethrotomy, to approach exact definition, which is not obtained by the terms boutonnière, perineal section, external urethrotomy, or perineal urethrotomy, all of which fail to designate with precision what is done.

The boutonnière (button-hole) might mean, and sometimes did mean, a small incision involving only the skin, in perinæo or along any part of the course of the urethra, or a similar incision including the canal itself. "Perineal section" does not imply division of the urethra, any more than does the boutonnière. "External urethrotomy" is applied by Mr. Syme to external division of the urethra in front of the scrotum, as well as in perinæo. Civiale's "perineal urethrotomy" might as well be interpreted to mean *internal* urethrotomy in the perineal portion of the urethra. But *external perineal urethrotomy* means precisely division of the urethra from without inward in perinæo.

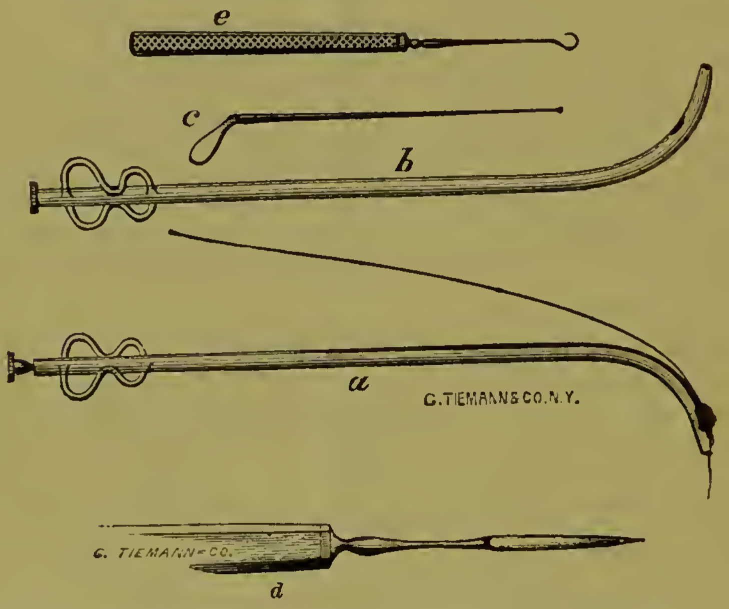
The old method of perineal section is well known to be uncertain, and to be often attended with great difficulty and danger, even with Mr. Arnott's improvement. Mr. Syme's operation is, I believe, equally uncertain, and, with his inflexible

[1] A portion of this paper was read before the State Medical Society at Albany, N. Y., February, 1869.

guide-staff, the surgeon cannot be absolutely certain that the instrument has not entered a false passage. This accident has occurred in the hands of surgeons experienced in this department—on one occasion in my presence, and an autopsy proved that, the staff having deviated from the proper channel, the stricture had not been divided.

After numerous trials of the various modes of external urethrotomy, and after a careful analysis of their defects and dangers, I have sought to devise a method by which the risk might be reduced to a minimum, and the steps of the operation rendered easy, safe, and certain.

Fig. 1.



a. Catheter staff, showing the conductor in the terminal canal, and the stylet a little withdrawn.
b. Catheter staff, with eye on the concave side.
c. Small grooved silver probe, with a broad handle, which can be bent to any angle.
d. Beaked bistoury—natural size.
e. Small hook, for catching the loop of silk.

It is the result of this endeavor which I now wish to submit to the profession.

The operation is as follows: the perinæum having been shaved, the patient is etherized. The urethra is explored with a flexible bulbous bougie, of proper size, to ascertain the exact seat of the obstruction. The canal is then filled with olive-oil, and the capillary probe-pointed whalebone bougie

(Fig. 1, *a*) is introduced into the urethra. If its point becomes engaged in a lacuna, it is withdrawn a little, and again carried onward with a rotary movement. If it enters a false passage, it is retained *in situ* by the left hand, while another is passed by its side. If this second guide makes its way into the false passage, it is to be treated precisely as was the first, and the operation repeated till one guide can be made to pass the obstruction and enter the bladder. Sometimes five or six guides are thus caught before the false passage is filled up and the natural route opened. I have frequently succeeded in thus reaching the bladder in very narrow strictures, supposed to have been impassable, and after all other means had failed. As soon as a guide enters the bladder—which may be known by the ease with which the instrument may be moved in and out—the other guides are withdrawn. The next step is to introduce a No. 8 grooved metallic catheter (Fig. 1, *b*), with a quarter of an inch of its extremity bridged over so as to convert the groove into a canal, the bridged portion itself being also grooved. Its introduction is accomplished by passing through the canal the free end of the retained guide, then holding the latter steadily between the thumb and index finger of the left hand, and pushing the catheter-staff gently into the urethra, until its point comes in contact with the face of the stricture. The staff and guide are then kept in position by an assistant, who at the same time supports the scrotum. The patient is placed in the lithotomy position, and held by two assistants, or better, by the aid of Pritchard's anklets and wristlets.

The surgeon, seated on a low chair, first makes a digital exploration per rectum, to ascertain, as far as practicable, the condition of the membranous and prostatic divisions of the urethra; then he makes a free incision, in the median line of the perinæum, extending from the base of the scrotum to within half an inch of the margin of the anus, involving only the skin and superficial fascia. The external incision, usually recommended in this operation, is from one inch to one inch and a half in length, but I believe that free external incisions here, as in lithotomy, are of decided advantage, as they expose fairly to view the subjacent parts, and tend to prevent subsequent infiltration of urine in the superficial layers. A few well-directed cuts having brought into view the urethra, the operator, with his finger-nail, feels for the groove on the bridged portion of the staff, and opens the canal upon this groove, longitudinally in the median line, exposing to sight the instrument. A loop of silk is then passed through each edge of the incised urethra, close to the face of the stricture, and held by the assistant in charge of the corresponding limb. This excellent contrivance, suggested and employed many years ago by Mr. Avery, of Charing Cross Hospital, London, is of the greatest service, and ought not to be omitted, as it constantly keeps in view the median line. When the urethra is opened, and the loops are secured, the catheter is withdrawn a little, so as to bring into view the black guide; then the stricture, with about half an inch of the uncontracted canal behind it, is divided. This, I think, is best accomplished by means of the small knife (Fig. 1, *d*), which I have modified from Weber's instrument for slitting the canaliculus lachrymalis. It is a very narrow, beaked, straight bistoury, about the size of a small probe, and is made to enter the stricture alongside of the guide, as if it were a probe, and the incision is done by directing the edge downward. The last step is to pass the catheter-staff, guided by the whalebone bougie, into the bladder; but, should it be arrested in its course, the knife must be reintroduced, and the incision extended farther back. The operation is thus completed without unnecessary delay, the bladder is entered with the greatest gentleness; and, by the free flow of urine through the catheter, the surgeon is certain that the instrument has gone in the right direction, that he has divided the stricture thoroughly, and that he has not simply enlarged a false passage.

This method is, I think, particularly well adapted to cases where the urethra is deep-seated, or where there is great induration or tumefaction of the perinæum, from old standing trouble, or from extravasation of urine. The presence, in the bladder, of the whalebone guide, so firm though so delicate; the assured position of the catheter-staff, compelled to follow the guide which lies in its terminal canal; the light thrown into the wound through the agency of the loops of silk, which constantly indicate the situation of the urethra, and of the median line; the ease and certainty with which the catheter-staff—still sliding over the guide—is made to enter the bladder after the incision; all seem to me to contribute to the success of the operation, in difficult cases especially, more than any other means which I have employed. Where the initial introduction of the whalebone guide is impossible, it may be passed through the perineal wound into the bladder, and the stricture divided as before; or Arnott's grooved probe may be used as a guide for the incision, and the whalebone bougie then passed along its groove. In either case, with the guide in the bladder after the incision, the point of the catheter-staff may be protruded from the wound, the free end of the guide carried through the terminal canal, and the bladder entered as before described.

When the state of the patient is such that the operation may be safely postponed, which can almost always be done when there is not impassable stricture with retention or extravasation of urine, I am in the habit of adopting, for a week or so, the following course of preparatory treatment:

The patient is confined, as far as possible, to the recumbent posture, and is directed to take a warm hip-bath every night. A diluent drink is to be freely used, ten drops of the tincture of chloride of iron taken three times daily, and five grains of quinine at bed-time. A suppository, containing one grain of the aqueous extract of opium, and half a grain of the extract of belladonna, is introduced into the rectum every night to allay spasm and procure sleep. Finally, the bowels are emptied, by the aid of a dose of oil, the evening before the operation. On the morning of the operation, an enema is given to completely free the rectum from fæces.

After the operation is concluded, and before the patient has fairly recovered from the effects of the anæsthesia, ten grains of quinine, with a quarter of a grain of morphia, are administered; and as soon as the nausea produced by the anæsthetic has subsided, a broth is given. On the following day, the diluent and iron are resumed, with the addition of three grains of quinine three times daily, and continued for two or three weeks. After four or five days, a warm hip-bath should be taken daily.

I believe that such a course of treatment is likely to prevent the occurrence of many of the unpleasant symptoms which sometimes follow the operation. The surgical after-treatment is at first similar to that observed in lithotomy. The scrotum is supported by a suspensory bandage, to guard against any possibility of infiltration of urine into its connective tissue, and the patient is kept on his back. Generally, the first time he urinates, most of the urine flows through the perineal wound; but afterward, for forty-eight hours, all the urine escapes through the proper channel, from swelling and contact of the lips of the wound; as soon as the swelling subsides, and suppuration is established, a certain quantity of urine again passes through the perineal wound, but no harm ensues.

In the great majority of my operations, both of internal and of external urethrotomy, I have not followed the usual practice of tying in a catheter, for reasons which I shall presently state.

The wound is not disturbed, and no instrument is passed into the bladder until the second day, and then a full-sized, highly-polished, conical steel sound, of proper curve, is introduced, and the introduction repeated every third day, until the wound has healed—which takes place generally within four weeks—and then the patient is taught to pass the instrument for himself, and is advised to continue its use indefinitely.

As the retention of a catheter, for a longer or shorter time after this operation, has been and is still strenuously insisted upon by many surgeons, I will state, briefly, the facts which at first convinced me of its uselessness, and finally of its occasional danger:

F. B. (case 1 in the table) came to me, in the latter part of 1860, with threatened retention of urine, from impassable stricture of the urethra. His condition was such, that I determined to give him the benefit of the external section, which was done without the aid of any staff or guide. An impassable stricture, in the pendulous portion of the urethra, rendered impossible the passage of a catheter to be retained *in situ*. As I had never known bad results to occur from the contact of the urine with the freshly-incised surface after the operation of lithotomy, I concluded not to retain the catheter with which I had withdrawn the urine through the perineal wound, notwithstanding the warnings of Mr. Syme, and of other good authorities, that such a procedure is dangerous. I preferred to allow the urine free flow through the artificial opening, without the aid of any catheter or canula. No urethral fever, nor indeed any untoward symptom ensued, and the perineal wound cicatrized in six weeks.

McW. (case 20 in table) applied for relief in June, 1861. He was at that time suffering from retention of urine, consequent upon stricture of the urethra. His bladder was distended to such a degree as to reach the level of the umbilicus, and various means had been tried for its relief, but in vain. He was at once subjected to the external division, without guide, in order to ward off extravasation and its consequences. A No. 12 silver catheter was then introduced into his bladder, and tied in position, but, two hours afterward, I was called to see the patient, and found that he had pulled it out. I endeavored to reintroduce the instrument, but the man became so unruly that I abandoned the idea, and left him to pass his urine through the wound. No urethral fever, nor any other bad symptom followed; and he made an excellent and rapid recovery. In about four weeks the wound was healed.

The following case shows some of the ill effects of the prolonged retention of the catheter:

A. F., sailor (case 4 in table) was sent to me for operation, by my friend Professor Van Buren, in April, 1864. He was then suffering from impassable stricture, the result of gonorrhœa. He had previously resorted to a hospital in one of our sister cities for treatment, and in May, 1860, perineal section was performed upon him for impassable stricture five and a half inches down. The patient remained in the hospital four months after the operation, wearing a flexible instrument during the whole period, with the exception of the last month, when the catheter was only retained at night. The perineal wound did not heal till the end of the third month. When he left the hospital, he had learned to pass for himself a No. 12 flexible bougie, but in the course of a few months the instrument became so much worn that he was forced to cease its use, and, being at sea, he could not procure a new one. The stricture soon began to recontract, and symptoms of cystitis appeared. When I first saw him in April, 1864, his urethra was found thickened, and No. ½ bougie could not be introduced.

On June 11, 1864, I performed upon him perineal urethrotomy without the previous introduction of a guide, as I could get none through; but, after having incised the urethra, I succeeded in passing through the obstruction a very slender grooved probe, such as that recommended by Mr. Arnott, and, thus guided, I was able to divide the stricture freely.

By request, and contrary to my own convictions, I introduced, and tied in position, a No. 12 silver catheter, which was allowed to remain undisturbed for forty-eight hours. On the third day the patient developed urethral fever, and on the fourth he had a retention of urine, with aggravation of his cystitis, induced, as I believe, by the presence of the catheter. He finally made a good recovery, and returned to his occupation, having learned to introduce for himself a highly-polished No. 17 conical steel sound.

Judging from the high reputation of his surgeon, I inferred that the operation, which had been performed in May, 1860, was properly done, and assumed that the stricture had been thoroughly divided, but the after-treatment was not beyond criticism. An elastic catheter was introduced, and retained in position, and when withdrawn it was found thickly incrusted with the salts of the urine. Could such a foreign body remain so long in the urethra and bladder without creating much irritation, and could it fail to prove otherwise than injurious? Still the wound healed, in spite of this interference, at the end of the third month. The irritation kept up by that foreign body would not have arisen had he been left to pass his urine through the perineal wound, as are nearly all patients, in our days, after lithotomy.

The alleged reasons for tying a catheter *in situ* to be worn until the wound has healed are, first, to prevent the urine from coming in contact with the recently-cut surface; and second, to hasten union, by still endeavoring to prevent the urine from passing through the granulating wound.

That a catheter tied in position does not prevent the urine from escaping between it and the urethral walls, however large the instrument may be, has long since been demonstrated, and there are few surgeons of experience who have not verified this fact. That the presence of the catheter does not hasten, but, on the contrary, does retard the progress of union of the perineal wound, is well illustrated by the case which is the subject of these comments. Other illustrative cases are not wanting in the records of hospitals.

I believe that the presence of the catheter, in the case just referred to, was among the most prominent causes of the recurrence of the stricture, and I do not see why the chronic urethritis thus induced should not have acted as that which had originally given rise to the stricture.

The following case is an instance of severe recurring chills occasioned by the retention of the catheter:

W. S. (case 12 in table) fell with one leg down a hatchway, striking his perinæum against its raised edge, but without a great degree of force, on the 22d of February, 1865. He was immediately conscious of bleeding from the urethra, and lost, in a pretty continuous flow, about a gill of blood. He refrained, through fear of pain, from attempting to pass water for about fourteen hours, and then, failing in the attempt, a catheter was introduced, but no urine flowed—apparently from clogging of the eyes of the instrument by coagulated blood. Half an hour afterward, while lying in his bunk, a few drops of urine escaped involuntarily, but on rising and making an effort, the stream ceased; when he fell asleep shortly afterward, his bladder relieved itself spontaneously, and for the two days ensuing he passed a pretty full stream, but on the third day contraction commenced, and in two weeks he again had retention, but no instruments could be passed, although attempted daily for two months, his urine being passed meanwhile with great pain, much straining, and only in drops.

In this condition he was subjected to perineal section, by one of my colleagues, on the 19th of August following, and a No. 8 silver catheter retained in the bladder. Severe chills recurring daily, the catheter was removed on the fourth day, and it could not afterward be introduced; but the chills ceased, and the patient was able to pass his water partly through the urethra, and partly through the perineal wound. As the latter tended to heal, the urethral stream was noticed to be again diminishing in size, and at the end of three months it had become quite small, and the wound in the perinæum had contracted to a fistulous orifice which showed no further tendency to close, more or less urine escaping through it at each effort to urinate. On the 16th of December following, Dr. Van Buren saw the patient in consultation with me at St. Vincent's Hospital, and advised a repetition of the operation of perineal urethrotomy. After the administration of ether, I performed the operation with the aid of a delicate bougie as a conductor. The stricture was freely divided, and a No. 14 steel sound could be readily passed into the bladder.

No catheter was retained in position. The sound was introduced daily for five days, and after this every second day. He had no chill nor fever; the urine came freely through the wound, until it closed entirely at the end of three weeks. He was then taught to introduce his own instrument, and remained under observation for two years.[1]

To further illustrate this, and other points in the after-treatment, I will now present, in tabular form, the results of twenty-five operations of external division of the urethra for stricture, which I have performed within the last nine years, showing the condition of the patient which rendered the operation imperative, the method employed, the progress, and the final result of each case:

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[1] This case was reported in the New York Medical Record, vol. i., No. 8, page 181.

NO.	NAME.	AGE.	CONDITION, ETC.	OPERATION.	FEATURES.	RESULT.
1.	F. B.	47.	Impassable stricture from gonorrhœa. Abscess at root of penis. Threatened retention.	Perineal urethrotomy without guide. Stricture divided upon a small grooved probe.	No catheter retained. No urethral fever.	Wound healed in six weeks. The patient was seen eight years subsequently. No recontraction at the seat of the perineal incision.
2.	D.	35.	Impassable stricture from gonorrhœa. Threatened retention.	Perineal urethrotomy without guide. Stricture divided upon a small grooved probe.	No catheter retained. No urethral fever.	Wound healed in four weeks. The patient was seen three months afterward, and I could then pass a large instrument.
3.	W. J.	49.	Impassable stricture of eleven years' standing from gonorrhœa. Chronic cystitis, with dribbling of urine from over-distention of the bladder.	Perineal urethrotomy without guide. Stricture divided upon a small grooved probe.	No catheter retained. No urethral fever. Rapid subsidence of the cystitis.	Wound healed in a month. Patient left the hospital quite well and promised to continue to pass a full-sized sound occasionally.
4.	A. F.	36.	Impassable stricture from gonorrhœa. Perineal section in 1860. Catheter retained for four months. Relapse. Cystitis. Stricture again impassable in 1864.	Perineal urethrotomy without guide. Stricture divided upon a small grooved probe.	Catheter retained forty-eight hours. Urethral fever. Aggravation of cystitis.	Wound healed in six weeks. Patient dismissed after having been taught to use No. 17 conical steel sound. Was last seen six months after the operation, and was in good health.
5.	G. D.	35.	Narrow stricture of three years' standing, from gonorrhœa. Retention and extravasation of urine.	Perineal urethrotomy with the aid of a capillary bougie as guide.	No catheter retained. No urethral fever.	Wound healed in about a month. The patient was seen one year afterward, he was then introducing periodically No. 15 steel sound.
6.	R. M.	36.	Impassable stricture of twelve years' standing, from gonorrhœa. Perineal fistulæ and constant dribbling from overflow.	Perineal urethrotomy without guide. Stricture divided upon a small grooved probe.	No catheter retained. No urethral fever.	Wound healed in five weeks. Patient dismissed in five months; he was then passing a normal stream of urine, and using No. 13 steel sound.
7.	J. McD.	28.	Stricture of three years' standing, from gonorrhœa. Retention and extravasation of urine.	Perineal urethrotomy with the aid of a capillary bougie as guide.	No catheter retained. No urethral fever.	Death in forty-six days, from advanced disease of the bladder and kidneys.
8.	L. M.	33.	Old impassable stricture from gonorrhœa. Threatened retention.	Perineal urethrotomy without guide.	No catheter retained. No urethral fever.	Wound healed within four weeks. Patient taught to introduce No. 12 for himself.

9.	J. M.	45.	Narrow, unyielding stricture of several years' standing, from gonorrhœa. Very frequent and painful micturition with occasional dribbling. Perineal abscess.	Perineal urethrotomy with the aid of a capillary whalebone bougie as guide.	No catheter retained. No urethral fever. The case progressed in every way satisfactorily. Was up and about in a week.	Wound healed in three weeks. Patient was heard from one year after the operation, and was then enjoying excellent health, and was introducing occasionally No. 15 conical steel sound.
10.	H. F.	23.	Stricture of six years' standing, from gonorrhœa. Repeated retentions. Perineal fistula.	External urethrotomy of Mr. Syme.	No catheter retained. Rigor within a few hours after the operation, no urine having yet passed through the perineal wound, as it was drawn, by means of a catheter, during the operation. The rigor was followed by some febrile reaction with a pulse of 100. This, however, soon passed away, and he seemed to be doing well. He had no recurrence of the rigor, but on the following day his heart's action became suddenly feeble, and he resembled a patient in the collapse of cholera, with a cold and livid surface and pinched-up countenance. His mind was perfectly clear, he had no suppression of urine, no vomiting. He had no disease, as far as known, save constitutional syphilis, as evinced by copper-colored scars on the extremities, and some nocturnal rheumatism.	Death in fifty-six hours after the operation, probably due to thrombosis of the heart. No autopsy.
11.	J. T.	37.	Old stricture from gonorrhœa. Large perineal fistula consequent upon sloughing of the scrotum, from extravasation.	External urethrotomy of Mr. Syme.	No catheter retained. No urethral fever.	Wound healed in six weeks, except a small fistulous opening which would only admit a small probe. He was able to pass for himself No. 15. Was heard from one year after the operation, and was then in good health.

NO.	NAME.	AGE.	CONDITION, ETC.	OPERATION.	FEATURES.	RESULT.
12.	W. S.	17.	Traumatic stricture from a fall upon the perinæum. Perineal section. Catheter tied in. Severe recurring chills. Catheter removed on the fourth day, and the chills ceased, but the instrument could not be reintroduced. Relapse, with a perineal fistula.	Perineal urethrotomy with the aid of a delicate flexible bougie as conductor, four months after the first operation.	No catheter retained. No urethral fever. No. 14 steel sound introduced every day for the first five days, then every second day, and finally but once a week.	Wound healed in three weeks. Was last seen about two years subsequently, he was still passing his No. 14 sound once a week, and was in excellent health.
13.	G. J.	28.	Narrow traumatic stricture, from a fall astride of a beam, with occasional retentions, and much straining in micturition.	Perineal urethrotomy with the aid of a fine bougie as conductor.	No catheter retained. No urethral fever. No instrument passed until the fifth day, and then, No. 17 was introduced every third day.	Wound healed on the twentieth day. The patient was last seen two years after the operation. Was then passing a good stream of urine, though he had neglected to use a sound since his dismissal.
14.	G. G.	12.	Occlusion of the urethra near the bulbo-membranous junction, from a fall astride of a fence. Perineal fistulæ. Much straining in micturition. Cystitis.	Perineal urethrotomy without guide, with the object of establishing a permanent perineal fistula of sufficient size to permit of easy micturition.	No catheter retained. No urethral fever. Rapid subsidence of the cystitis. Instruments introduced every third day.	The fistula was kept open for nearly two years, by the occasional introduction of a No. 8 catheter, but, after he ceased the use of the instrument, the fistula soon contracted. and almost entirely closed. The patient was then subjected to a second operation by Dr. Stephen Rogers, of New York city, who tells me that the wound has entirely healed, and that the patient was doing well at last accounts.
15.	J. G.	24.	Narrow stricture from fracture of the pubes. Extravasation. Urinary fistulæ in thigh and hypogastric region. Cystitis. Constant dribbling.	Perineal urethrotomy with the aid of a capillary bougie as conductor.	No catheter retained. Erysipelas on the third day attacking the body and limbs, but not the perineal wound. The ward in which the patient was placed was infected, as indeed were the other wards, several patients being affected with erysipelas.	Secondary abscesses. in the thighs, from pyæmia. Death on the nineteenth day. No autopsy.
16.	J. O'C.	37.	Narrow stricture from severe contusion of the perinæum, and	Perineal urethrotomy with the aid of a capillary whalebone bougie	No catheter retained. No urethral fever. No. 15 steel	Wound healed in two weeks. The patient was taught to introduce

			probably fracture of the pubes. Retention on the eighteenth day. Urethra very sensitive. Dribbling. Threatened retention. Stricture would not yield to dilatation.	as conductor. Stricture divided upon a small grooved probe.	sound introduced every second or third day.	his own instrument. Was last seen a year and a half after the operation, and was then enjoying good health, and was passing a normal stream of urine.
17.	R. T.	35.	Occlusion of the urethra at the seat of injury, from a fall astride of a manger. Retention and extravasation a few days after the injury. Fistula in perinæo. Cystitis, straining, dribbling.	Perineal urethrotomy without guide, with the object of establishing a sufficiently large perineal fistula to facilitate micturition.	No catheter retained. No urethral fever.	The fistula had contracted somewhat, a year after the operation, but the condition of the patient was greatly ameliorated.
18.	F. McG.	46.	Impassable stricture from fracture of the pubes. False passage. Threatened retention of urine. Catheterism unsuccessful.	Perineal urethrotomy without guide. Hemorrhage to the extent of a pint, from oozing, occurred during the operation, but ceased spontaneously.	A short catheter was passed into the bladder through the perineal wound, and retained only twenty-four hours. No urethral fever. No bad symptoms.	Wound healed in seventeen days. The patient was only temporarily relieved. The stricture has recontracted and will soon require a second operation. The cause of relapse was the inability to introduce any instruments after the first week.[1]
19.	A.	45.	Resilient stricture of fifteen years' standing, with urinary fistulæ. Due, partly to gonorrhœa, and partly to a contusion of the perinæum.	External urethrotomy of Mr. Syme. Fistulous tracts freely laid open.	Silver catheter retained in position for forty-eight hours. Urethral fever on the third day.	Wound and fistulous tracts healed in six weeks. The patient was dismissed after he had been taught to introduce for himself No. 12. Was last seen two years after the operation, was enjoying good health, and was still using the sound.
20.	McW.	35.	Old, impassable stricture, due partly to gonorrhœa, and partly to a contusion of the perinæum while riding on horseback. Retention of urine. Failure of catheterism.	Perineal urethrotomy without guide. Stricture divided upon a small grooved probe.	Catheter retained in position, but removed by the patient within two hours. The instrument could not again be introduced. No urethral fever. No. 12 sound was introduced every second day.	Wound healed in four weeks. The patient was last seen five months after the operation. He was then enjoying good health, and was passing a normal stream of urine.

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[1] A second operation—without guide—was performed upon this patient, on the 21st of April, 1869. His condition has since greatly improved; he is able to pass a normal stream of urine, and has been taught to introduce his own instrument, No. 15 conical steel sound, and has promised to continue its use once a week for an indefinite period.

NO.	NAME.	AGE.	CONDITION, ETC.	OPERATION.	FEATURES.	RESULT.
21.	P. L.	32.	Impassable stricture, due partly to gonorrhœa, and partly to laceration of the urethra. Retention and extravasation of urine, followed by urinary fistulæ.	Perineal urethrotomy without guide. Stricture divided upon a small grooved probe.	No catheter retained. No urethral fever. No. 12 sound introduced every second day.	Wound healed in nineteen days. He was taught to pass for himself No. 12 sound, and was last seen eight months after the operation. The fistulous tracts had completely healed. He was then in good health, and was passing a good stream of urine.
22.	J. H.	24.	Narrow stricture of long standing, partly from traumatic cause, and partly from gonorrhœa. Constant dribbling from overflow. Threatened retention of urine.	Perineal urethrotomy with the aid of a slender bougie as conductor. Stricture divided upon a small grooved probe.	No catheter retained. No urethral fever. No. 12 sound introduced every third day.	Wound healed in one month. The patient remained under observation for seven months. Was seen one year afterward, when No. 11 steel sound could be passed with ease.
23.	T. S.	36.	Stricture from contusion of the perinæum. Dilatation carried to No. 18. Relapse within a week, then retention of urine followed by perineal abscess.	External urethrotomy of Mr. Syme.	No catheter retained. No urethral fever. No. 16 sound introduced every third day.	Wound healed within six weeks. The patient was taught to pass for himself No. 16 sound. He is still under observation, and is passing a normal stream of urine.
24.	L. C. F.	27.	Stricture of long standing, from injury of the perinæum. Frequent retentions in the space of ten years. Constant dribbling from overflow. Cystitis and pyelitis. The case was very unpromising, but the operation was advised as his last and only chance.	External perineal urethrotomy.	No catheter retained. Chill, on the fifth day, followed by vomiting and pain in the region of the bladder and of the kidneys. Irregular slight rigors every day or two.	Death, on the seventeenth day after the operation, from advanced disease of the bladder and kidneys.
25.	R. S. P.	40.	Stricture of long standing, due partly to gonorrhœa, partly to an injury of the perinæum, while riding on horseback. Retention and extravasation, followed by urinary fistula. Constant dribbling of urine from overflow.	External perineal urethrotomy.	No catheter retained. No urethral fever. No. 12 sound introduced every third day.	Wound healed in four weeks. A small, fistulous orifice was still patent, but was in a fair way to cicatrize. He had learned to pass his own instrument, and promised to continue its use, once a week, for an indefinite period. Patient heard from, one month subsequently to his dismissal, and he reported that the fistulous opening had entirely closed. His general health was excellent, and he was passing a normal stream of urine.

In the cases just enumerated, I have adhered to the rules, given by Mr. Syme, to be observed in the operation of "External Urethrotomy," with the exceptions to be presently mentioned.

Mr. Syme's directions, as summarized by Sir Henry Thompson, are as follows:

1. Maintain the median line in the incisions.
2. Make a direct opening down to the staff, and not a tortuous one.
3. Divide the whole of the contracted part, rather more than less.
4. Do not cut so far back as to endanger the deep fascia of the perinæum, and use the knife in the deep incisions with the cutting-edge uppermost.
5. Do not close the end of the inlying catheter, lest urine be forced into or through the wound for want of patency in the instrument.
6. Avoid escape or displacement of the instrument.
7. If incisions are made far back, introduce the curved tube through the wound when the catheter is withdrawn.
8. Do not neglect dilatation during the progress of recovery.

I have, perhaps, departed from the fourth rule, by dividing the anterior layer of the deep perineal fascia in several cases of traumatic stricture at the bulbo-membranous junction, but no harm has come of this. It is scarcely possible to divide freely such strictures without running the risk of cutting that portion of the deep fascia of the perinæum. It is always divided in lithotomy, and there are seldom if ever any serious consequences. In a number of cases also I have cut with the edge of the knife downward, in making the deep incisions, and no mischief has resulted.

Rules fifth, sixth and seventh, have also been departed from in all but two cases (cases 4 and 19 in table), and, in these two, I feel confident that the retention of the catheter was the cause of urethral fever, and in one of them, also, of the aggravation of old cystitis.

I believe that the retention of a catheter in the bladder, after perineal urethrotomy, even for forty-eight hours, is not only unnecessary but harmful. Unnecessary, because it does not fulfil the supposed indication of preventing the flow of urine through the wound, and because the contact of the urine with the freshly-cut surfaces does no harm, as is exemplified by lateral and median lithotomy, and also by the cases which have been detailed. Harmful, because the presence of the instrument—a foreign body—in the bladder, sometimes causes ulceration and perforation of that viscus, and does give rise to inflammation and to urethral fever.

Vidal (de Cassis) says, however great may be the calibre of the catheter, a certain quantity of urine always flows between it and the urethra.[1]

Sir Henry Thompson, in speaking of the treatment of obstinate fistulæ, says: "Experience shows that, however large the instrument may be, and however closely it may fit the urethra at the present moment, before twenty-four or thirty-six hours have elapsed, it will lie loosely in the canal, and urine will pass by its side. . . . . . ."

He further says, "The mode of treatment, therefore, which consists of tying in a catheter, is to be regarded as inadequate to the cure of fistula, except so far as it produces dilatation; and it is one which has obtained countenance chiefly from the plausibility of a theory which is certainly unsupported in practice."[2]

In a clinical lecture delivered at the University of New York, February 6, 1866, Professor Van Buren condemned the practice of tying in a catheter after perineal urethrotomy. His reasons are so cogent and well put, that I shall quote them at length. He says: "If I felt at liberty to cite the mishaps of others as well as my own for your instruction, I could detail to you numerous examples of serious injury resulting from the prolonged retention of the catheter in the bladder—flexible as well as metallic. Besides chills and urinary fever, and ulceration of the urethra from pressure, I have encountered instances of cystitis, calculous formation, ulceration of the bladder, and fatal peritonitis, from this practice.

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[1] Traité de Pathologie Externe et de Médecine Opératoire. Paris, 1841, t. v. p. 259.

[2] On the Pathology and Treatment of Stricture of the Urethra and Urinary Fistulæ. London, 1858, p. 360.

Moreover, I have satisfied myself by personal observation, as well as by the study of recorded cases, that the presence of a catheter in the bladder, after this operation, retards the healing of the wound, and thus increases the danger of permanent perineal fistula. The convexity of the catheter of ordinary curve, unless the point of the instrument is projected into the cavity of the bladder farther than is consistent with the safety of this organ, will make pressure more or less directly over the seat of the urethral incision; and this is especially the case in traumatic stricture, where the incision necessarily involves a part of the membranous portion of the canal. Influenced by this experience, I had long since abandoned the practice of leaving a catheter in the bladder, after incision of the urethra through the perinæum, for a longer period than forty-eight hours; further experience and observation have recently satisfied me that it is better for the patient, unless in exceptional cases, that the catheter should not be left in the bladder at all—as in the cases which form the basis of these remarks. In justification of this conclusion, I think, in the first place, that the experience of practical surgeons will confirm the opinion, that the tying of a catheter, either metallic or flexible, in a man's urethra and bladder is a proceeding attended by more or less discomfort, and often with danger. In some cases, the instrument cannot be tolerated from the moment of its introduction; in many, pain and uneasiness are constantly present; in others, chills and febrile reactions necessitate its removal—as in the case before us.[1] It is, therefore, to be regarded an evil, in a greater or less degree. Now, in the second place, what is the compensating good which justifies the practice? It is the general impression, I believe, that the presence of the catheter in the bladder, by preventing the flow of urine through the newly-made wound, will obviate the bad consequences attributed to the contact of urine with a recently-cut surface, and will consequently facilitate its healing; it may be, also, that extravasation of urine through the walls of the incision is apprehended by some. I question the correctness of these views, on the following grounds: 1. The presence of the catheter in the bladder does not prevent the escape of more or less urine through the wound, which almost invariably occurs in some degree, either at the time of the operation or subsequently. I have observed this fact in quite a number of cases, and it is mentioned, in a large proportion of recorded cases. 2. The consequences of contact of urine with the walls of a recent incision are not serious, as is demonstrated after the operation of lithotomy. 3. In the recorded cases which I have studied, the closure of the perineal wound is certainly delayed by the presence of the catheter in the bladder; and it takes place most rapidly when no catheter is worn. Finally, a fistula following the operation of lithotomy is exceedingly rare, and here the urine flows through the wound from the moment of the operation. As to the danger of extravasation of urine through the walls of the incision, it is only to be apprehended where the deep layer of the triangular ligament, the pelvic fascia, has been divided; or, to the extent of a few drops, when the scrotum has not been properly supported after the operation—a precaution too often neglected."[1]

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[1] Case 12 in the table.

Mr. Syme, in referring to "between eighty and ninety" cases of external division, says: "Alarming symptoms were by no means rare, since every third or fourth patient suffered from rigors, vomiting, delirium, or suppression of urine."[2] No doubt exists in my mind that the presence of the catheter in the bladder was the exciting cause of these grave symptoms.

After having treated this large number of patients without any death, Mr. Syme met with two fatal cases, and he attributed these deaths to the contact of the urine with the wound, and then proposed the use of a short catheter, to be introduced into the bladder through the perineal wound, and secured in position. But this, though not so harmful, is, I believe, quite as unnecessary as the use of the long catheter.

A medical gentleman of New York city related to me the history of a patient on whom the "perineal section" had been performed, and where ulceration took place at the penoscrotal junction, from the prolonged retention of a silver catheter, so that the instrument could be seen through the fistulous opening, which showed no disposition to heal.

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[1] See Medical Record, Vol. i. No. 8, p. 180.

[2] London Lancet, August 21, 1858, p. 191.

Dr. Bumstead[1] alludes to a similar case in a patient who had been operated upon in California; and he also relates one instance where death occurred from retention of the catheter for a fortnight, "and at the post-mortem examination there was found a small, but deep, ulceration of the bladder, and another, quite extensive, of the inferior wall of the urethra in front of the scrotum, which was only separated from the surface by the integument."

A fatal case occurred in the practice of Professor Spence, of Edinburgh, where "peritonitis was produced by the partial penetration of the coats of the bladder by the in-lying catheter," which had only been retained *in situ* for forty-five hours. I find it recorded in Sir Henry Thompson's Treatise on Stricture, etc., London, 1858, page 278. The retention of a catheter, for forty-eight hours, in cases 4 and 19, gave rise to urethral fever, and to cystitis. The retention of the instrument for four days, in case 12, gave rise to severe recurring chills, and it had to be withdrawn in consequence. But, after the second operation, no catheter was tied in, and the patient did not suffer from rigors, nor from any other discomfort.

Is it not fair, then, after all this accumulated evidence, to conclude that the retention of the catheter in the bladder, passed either through the whole length of the urethra or through the perineal wound, does not fulfil the indications for which it is used; that it is, as a general rule, attended with danger, and that its omission is a safe measure?

In certain cases of traumatic stricture, especially where the urethra has been torn completely across, or where occlusion of the canal has taken place at the seat of injury, an exception, to the rule of leaving out the catheter, may be made, though it may well be questioned whether, even under these circumstances, the instrument is needed.

After I had performed the external division for occlusion of the urethra at the seat of injury, I once debated the propriety of leaving in a new gum-catheter, and renewing the instrument daily for a week—the same instrument never to be employed a second time, in order, more surely, to avoid the danger of incrustation. But this plan was not carried out, and the patient did well.

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[1] On the Pathology and Treatment of Venereal Diseases, 1866, p. 316.

The eighth rule should, in my opinion, never be departed from; on the contrary, the use of large instruments should be continued indefinitely, and not, as sometimes recommended, only during the progress of recovery. It is well known that, if large instruments are not introduced at intervals of a week or two after the union of the wound, a certain amount of recontraction will take place, although probably not to an extent to give rise to so bad a stricture as before, unless the original causes of the trouble should recur—such as gonorrhœa, injury of the perinæum, debauch, exposure, etc. Patients, who have been taught to introduce their own steel sounds, should, for as long a time as possible, be retained under observation, and the importance of keeping the instruments free from rust and smoothly polished, and the necessity of great gentleness in their use, constantly impressed upon them; for, careless and rough manipulation, by giving rise to urethritis, or to laceration of the mucous membrane, is apt to cause relapse.

The rough use of the sound will, sometimes, bring on orchitis. The too frequent introduction of the instrument also occasionally produces this result. Another fact, worthy of remembrance, is, that the sound should not be retained in the urethra longer than five minutes. There are patients who are liable to attacks of orchitis in spite of the greatest care and gentleness in the use of the sound. This may sometimes be averted by advising them to take the following precautions:

1. Use a diluent drink through the day preceding and the one following the introduction of the instrument.
2. Take a warm hip-bath immediately after.
3. Support the testicles with a suspensory bandage.
4. Remain in the horizontal posture for twelve hours.

In the case of working men, or others who are obliged to be about through the week, it is well to recommend them to pass the instrument every Saturday evening after working hours, that additional rest may be had on the day following, if necessary, without loss of valuable time.

The term large instrument is only relative; the diameter of the sound should be proportionate to that of the uncontracted part of the urethra, and, if the meatus is abnormally narrow, it should be freely incised longitudinally along its floor, and the calibre of the canal then estimated. Some urethræ will only admit No. 12, while others are sufficiently capacious to permit the easy introduction of No. 18, an instrument of nearly 10½ millimetres (over three-eighths of an inch) in diameter.

This after-treatment of the external division of strictures is analogous to the treatment of deep burns near the flexures of the limbs, when it is so desirable to keep the member in an extended position in order to obtain a *wide cicatricial splice*, and thus allow for subsequent contraction.

Mr. Reybard,[1] having demonstrated that longitudinal wounds of the urethra do not generally give rise to stricture, recommends[2] that, during cicatrization—after the division of strictures—a large instrument be introduced, or, better, a dilator to separate the lips of the wound, and thus to augment the width of the cicatrix.

To arrive at a correct appreciation of the value of the operation of external division of strictures of the urethra, it is necessary to consider:

1. Under what circumstances the operation is justifiable.
2. What amount of danger attends its performance, and
3. How far it is entitled to be considered as a means of cure.

Sir Henry Thompson, after whom the last two inquiries are phrased, says: "It has been stated that the hazard to which the patient's life is exposed by it (the operation) is too great to be incurred for the sake of obtaining a cure of his complaint. This view has not improbably arisen, in some measure, from the still common but erroneous habit, already alluded to, of confounding external division of a permeable stricture upon a sound with the operation upon an impassable one without it."[3]

Professor Van Buren, in a published lecture,[4] remarks;

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[1] Traité pratique sur les rétrécissements de l'urètre, etc., Paris, 1853, pp. 63, 64.

[2] Loc. cit., p. 442.

[3] Thompson, op. cit., p. 278.

[4] Medical Record, Vol. i. p. 280.

"The dangers of this operation depend upon the conditions which necessitate its performance, rather than upon the proceeding itself. If, as is always desirable, its necessity has been foreseen, and time secured for the examination of the internal organs, and ample preparation made, *the danger is trivial;* but if, on the contrary, as often happens in hospital practice, the patient falls into the surgeon's hands with prolonged retention or extravasation of urine, from recklessness and neglect, the operation is likely to be much less favorable. And, if, in addition to these serious complications, the stricture should prove to be impassable, and the operation is necessarily undertaken without any guide to the bladder, it becomes *one of the most difficult and uncertain proceedings of surgery.* The alternative of puncture of the bladder from the rectum, or above the pubes, may in rare cases be adopted from necessity; but these measures afford only temporary respite, inasmuch as they leave the stricture, the cause of all the trouble, unrelieved."

Dr. Markoe says:[1] "It must be evident to you that the success or failure of it depends upon the condition of the patient for which the operation becomes necessary, that the dangers of the operation itself can hardly be separated from those of the disease for which it is performed. Being a last and only resort for a desperate condition of things, we cannot select our cases nor prepare them for the operation."

Professor S. D. Gross observes: "The operation is by no means free from danger, and requires the most consummate skill for its successful execution. None but a madman or a fool would attempt it, unless he had a profound knowledge of the anatomy of the parts, and a thorough acquaintance with the use of instruments."[2]

I have quoted the opinions of these distinguished surgeons—pertinent to the estimate of the operation—as fairly mirroring the advanced mind of the profession, and that I may express my general accordance. But I must insist, most emphatically, upon a correct interpretation of the words "the operation being a last resource." While, beyond all question, the conscientious surgeon must propose to himself all other available and justifiable means of relief, yet, when these have been tried and have failed, the knife is not only the "last resource," but the *only* resource, and must be promptly and resolutely applied. The operation has often been deferred so long, that the bladder and kidneys have become irreparably damaged by the action of the frequently-retained urine, and finally the knife is used when all operative procedures are contraindicated. This long delay accounts, in a great measure, as I believe, for the large percentage of mortality which has followed the operation, and has brought it into disrepute. So great was formerly this mortality, that, toward the end of the last century, such authorities as Desault and Chopart positively condemned the operation, and it fell into disuse. Its revival in our country is due to the late Dr. Alexander H. Stevens, who performed it "with entire success, after the common modes of treatment had failed," in the year 1817.[1]

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[1] Clinical Lecture on Perineal Section, etc., American Medical Times, Vol. i. p. 55.

[2] Diseases and Injuries of the Bladder, Prostate, and Urethra. Second Edition. Philadelphia, 1855. p. 801.

Beginning in April, 1820, Dr. Horatio G. Jameson, of Baltimore, had performed ten operations by December, 1823, without a death.[2]

Dr. David L. Rogers reports twelve cases, the first of which occurred in 1823.[3]

Two operations, by Dr. John C. Warren, of Boston, were reported in 1829.[4]

The first consideration, namely, under what circumstances the operation is justifiable, has been discussed with warmth, and extreme views taken thereof, by three classes of surgeons. The first class resort to cutting forthwith, in every case of narrow stricture, and assume that no other mode of treatment is applicable. The second class maintain that "it is not necessary in cases where an instrument can be passed into the bladder." The third class are of opinion that "the hazard to which the patient's life is exposed by it (the operation) is too great to be incurred for the sake of obtaining a cure of his complaint," that it is consequently unjustifiable, and that it should under no circumstances be resorted to. These diverse views have caused no little perplexity in the minds of the inexperienced.

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[1] Med. and Surg. Reg., etc., N. Y. Hospital, p. 75.

[2] American Medical Recorder, Vol. vii, 1824.

[3] Philadelphia Medical and Physical Journal, Vol. xix, p. 186.

[4] Boston Medical and Surgical Journal, July 7, 1829.

The advances that have been made in our knowledge of the pathology and treatment of stricture of the urethra indicate a moderate and middle course to be pursued. It is now believed, by conservative and judicious surgeons, that the class of cases which requires this operation is small, and that, even in these cases, before resorting to the knife, gradual dilatation and all the other available means of relief should be thoroughly and faithfully tried. Impermeability, resiliency, or great irritability of strictures, are indications by which these surgeons are influenced in the adoption of this mode of treatment. In impassable strictures, attended with retention or extravasation of urine, or where there exist obstinate urinary fistulæ, few now entertain any doubt of the propriety of the operation. Narrow strictures, from traumatic lesions, are, it is thought, sufficient, as a general rule, to warrant the external perineal division.

The proper appreciation of the second consideration, namely, what amount of danger attends the performance of the operation, is of the greatest importance, as the risks of the operation have been greatly exaggerated, and some of them are more imaginary than real.

Much credit is due to Professor Syme, of Edinburgh, for recalling the attention of the surgical world to the operation, and for demonstrating, subsequently, by a large number of successful cases, that it was not as perilous as was formerly believed, provided it was done with due caution and at the proper time. Now the operation is as firmly established, and is considered as safe, as lithotomy—in cases uncomplicated with advanced disease of the bladder and kidneys—even where no guide can be introduced. In my own experience, the operation without a conductor has been attended with no ill results. In the twenty-five tabulated cases, it will be noticed that not a single death has occurred among the eleven patients operated upon in this manner.

Mr. Syme makes permeability a prerequisite to the performance of his operation. He assumes that there are no impermeable strictures of idiopathic origin, and that, if urine flows through the canal, an instrument can be made to enter the bladder by the exercise of patience and of sufficient dexterity. Nearly every surgeon of experience has been able to verify the fact that there are some strictures which are impassable to instruments of the minutest diameter, while they are permeable to the urine, and this, together with Mr. Syme's acknowledged failure to introduce a conductor in some instances, renders it superfluous for me to give any examples, or to defend the operation in impassable, or even in impermeable strictures, when the other indications are clear, especially since for the last half century the external section has been done in this country, for such cases, with great success.

On the other hand, those extremists, who maintain that permeability to instruments necessarily contraindicates the operation, meet with very few supporters. The aim of the majority of surgeons, in our day, is to endeavor to pass in a conductor, but, when this is not practicable, they operate without it, for the double purpose of dividing the stricture, and of relieving or averting retention of urine.

In 345 operations of external division of strictures, performed by American surgeons, 233 of which were done without a conductor, there were forty-one deaths; about twelve per cent. The assigned causes of death were: advanced disease of the bladder and kidneys in twenty-two cases, pyæmia in fifteen cases, erysipelas and pyæmia in one case, intra-pelvic abscess and pyæmia in one case, and thrombosis in two cases.

According to the late Prof. Miller, of the University of Edinburgh, the following are the dangers which attend the performance of the operation:[1]

1. Hæmorrhage.
2. Infiltration of urine.
3. Abscess in or near the wound, leading perhaps to fistula and irritative fever.
4. Intra-pelvic abscess.
5. Erysipelas.
6. Pyæmia.

[1] Wade on Stricture of the Urethra, etc., London, 1853, p. 209.

Not a single case of fatal hæmorrhage has been mentioned as having occurred among the 345 patients referred to above, the prominent features in many of which were kindly furnished me by the operators themselves.

Of these 345 patients there were but two who lost more than the usual amount of blood; in one case the hæmorrhage was from an anomalous branch of the artery of the bulb, which was controlled by ligature; in the other case—one of my own patients—about one pint of blood was lost from oozing, but the hæmorrhage ceased spontaneously and did not recur.

Troublesome hæmorrhage would, then, seem to be of very rare occurrence in this operation, though, among some cases reported by Sir Henry Thompson, Prof. Syme, and Mr. Henry Smith, there were a few fatal results.

Infiltration of urine, after the operation, is only liable to take place when the external incision is small, or when the attendant has neglected to support the scrotum with a sling-bandage. Abscess in or near the wound is not apt to ensue if the lips of the wound are kept asunder, and union by granulation promoted.

Only one intra-pelvic abscess was reported, among the 345 cases before referred to, and there, pyæmia coexisted. I believe that it will not usually follow, except as a secondary abscess, unless the incision should involve the pelvic fascia, and I can scarcely conceive of any constriction of the urethra which would necessitate so extensive an incision.

I have witnessed but one case of erysipelas, and, in that, neither the wound nor the genitals were affected. This is a complication which is liable to attend any surgical operation, and belongs to the wards of an infected hospital. Pyæmia may be placed in the same category as erysipelas, though a large proportion of deaths is credited to it, but it is just as liable to occur after divulsion or *internal* urethrotomy as after the external division.

In these 345 cases, the greatest proportion of deaths was due to advanced disease of the bladder and kidneys—chronic cystitis with concentric hypertrophy of the bladder, pyelitis, and renal abscesses, having been found in many of the cases. This condition of the urinary organs can frequently be discovered in time; and under such circumstances the operation is contra-indicated. If, then, we deduct the twenty-two deaths which were attributed to this cause, we have here a mortality of about five and a half per cent., as the legitimate mortality of the operation.

I do not propose on this occasion to take up the question of "urethral fever," as my experience, in regard to it, is immature; but I hope ere long to give the results of future observations on this sometimes formidable complication.

The third consideration must now come up for investigation, namely—how far the operation is to be considered as a means of cure. Sir Henry Thompson makes the three following points:

1. "It may fail to afford any relief."
2. "It may cure for a short period, and afterward be followed by a relapse."
3. "It may effect a permanent cure."

It may fail to afford relief if the stricture has escaped division, or, as Thompson suggests, if the occurrence of sloughing has prevented the possibility of the union of the wound. I have observed cases of failure from the former, but never from the latter cause. Fatal cases are of course excluded from consideration.

It will only afford temporary relief if the stricture has not been completely divided; or if the patient has neglected the periodical introduction of a sound; or if there is a recurrence of the original cause of the trouble. Mr. Syme attributes relapse to these causes, and also to the too rapid union of the wound.

It is now believed that the operation will afford permanent relief only so long as the patient continues the use of a full-sized instrument at intervals of a week or two; and, as far as I am aware, there is no method of treatment as yet devised, for obstinate stricture of the urethra, which will effect a permanent cure, without the occasional use of a sound.

In conclusion, I will advert to a few cases, out of many in my possession, which have been treated by surgeons of New

York, to show how much can sometimes be expected from this operation.

Prof. Post, of the University of New York, performed the operation twenty years ago, upon a patient who is now in the enjoyment of excellent health, is passing a good stream of urine, and is still introducing a full-sized instrument.

A gentleman, on whom Prof. Van Buren had performed the external section, for traumatic stricture, twenty years before, was under my care about two years ago, and I passed for him, once a fortnight, a No. 11 conical sound.

I assisted the same surgeon in a similar operation, five years since, the subject of which I saw but a few weeks ago; he was then in excellent health, and was introducing for himself once a week a No. 12 conical sound.

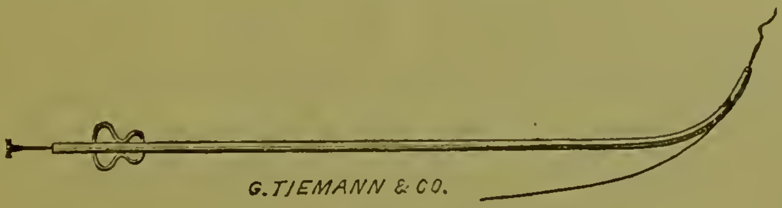
Dr. J. J. Crane, of New York city, mentioned to me two cases operated upon by him; one nine years ago, and the other seven years previously; they are still in good condition. I saw the latter patient with him a few weeks since, and was able to pass a No. 10 instrument. He had had more or less trouble after the operation, because of his neglect to use the sound; latterly, however, the instrument has been introduced at regular intervals, and he has greatly improved.

Dr. Lewis A. Sayre related to me the history of a patient, on whom he had done the operation of external division eighteen years ago. The man is still in very good health, and has had no symptoms of relapse.

One of my own patients returned to me eight years after the operation, without any recontraction, though he had used no instrument.

This contribution to the surgery of the urethra is offered, with the double object of awakening still deeper interest in an operation of singular interest and exaggerated danger, as well as to elicit from American surgeons the results of their experience in external perineal urethrotomy, that I may incorporate them in an essay upon the subject, which I am now preparing.

Addendum.—In connection with the matter under discussion in this paper, I would call the attention of the profession to a catheter devised by myself, for use in retention of urine arising from stricture of the urethra. The accompanying description and wood engraving of the instrument are copied from the *Medical Record*, May 15, 1869.



The catheter is three millimetres in diameter, nearly corresponding to No. 3 of the English scale, and is conical, its point being two millimetres in diameter, about equal to No. 1 of the same scale. A groove on its convex side extends a distance of four inches, and is bridged over in its last twelfth of an inch, so as to form a canal for the reception of a delicate whalebone guide. The catheter eye is on the concave side of the instrument, about three-fourths of an inch from its point, and is kept closed by a well-fitted stylet. Its curve is equal to one-fifth of the circumference of a circle three inches and a quarter in diameter.

The manner of using the instrument is as follows: With a small syringe, the urethra is to be filled with olive oil, and an attempt made to introduce a probe-pointed whalebone guide, half a millimetre in diameter, and of the length of an ordinary bougie, the point of which may be made temporarily spiral by immersion in boiling water, then twisting around a small staff, and suddenly cooling it. If its point becomes engaged in a lacuna, it is to be withdrawn a little, and carried onward with a rotary movement. If it enters a false passage, it is to be retained *in situ* with the left hand, while another is passed by its side. If this second guide makes its way into the false passage, it is to be treated precisely as was the first, and the operation repeated till one guide be made to pass the obstruction and enter the bladder. Sometimes five or six guides are thus caught before the false passage is filled up, and the natural route opened. As soon as the bladder is entered by a guide—which is known by the instrument being easily moved in and out—the other guides are to be withdrawn, the free end of the retained guide passed through the canal at the end of the catheter, and this instrument carried down the urethra along the guide, until its point reaches the stricture. Generally, with very slight pressure in the right direction, the catheter may be made to enter the stricture and finally pass into the bladder. The guide may be kept in position after the withdrawal of the catheter, and dilatation carried on by the successive introduction of larger sized catheters of similar construction; or divulsion may be resorted to by means of Mr. Holt's or Sir Henry Thompson's instrument, modified by means of the terminal canal for the passage of the guide; or internal urethrotomy may be practised with any of the various urethrotomes, having only this simple modification; or, as has already on several occasions been done, the retention catheter may be made available in external urethrotomy, instead of Mr. Syme's staff.